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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,625

06/24/2005

Toru Segawa

038908.56406US

6712

23911 7590 06/28/2007

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EXAMINER

HURLEY, KEVIN

ART UNIT

PAPER NUMBER

3611

MAIL DATE

DELIVERY MODE

06/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/540,625

Applicant(s)

SEGAWA ET AL.

Examiner

Kevin Hurley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-29 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 6-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5 and 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 3, 6-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8 May 2007.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3,6-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 includes double recitations of previously claimed elements, such as “a pre-load pad”, “an assist shaft”, “a gear housing”, etc.

Claim 6 includes a double recitation of the element “a worm” which renders the claim indefinite, as the “worm” was already recited in claim 1.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 4-5, 29 is rejected under 35 U.S.C. 102(e) as being anticipated by Segawa 7,100,734.

Segawa discloses a power steering system comprising a steering shaft 2 provided at a rear end portion thereof with a steering wheel 1; a pinion 11 provided on a front end side of the steering shaft, a rack 12 meshed with the pinion or with a member supported on the pinion; an electric motor 31 for rotatably driving the worm shaft; a torque sensor 3 for detecting the direction and magnitude of a torque applied to the steering shaft or pinion; and a controller 6 for controlling a drive status of the electric motor based on a signal input from the torque sensor; a worm reduction gear comprising a worm wheel 28, a worm shaft 29 and an elastic body 30, wherein the elastic body applies an elastic force to the worm shaft in a direction towards the worm wheel via a pre-load pad 70, and the worm wheel is fixed freely to an assist shaft, and opposite ends of the worm shaft are supported on the inside of a gear housing by a pair of bearings 36, 37, and a worm 27 provided in an intermediate portion of the worm shaft meshes with the worm wheel, and displacement of the pre-load pad in relation to a predetermined direction, is restricted by a guide face provided on the gear housing or on a member fixed to the gear housing, and a clearance between the pre-load and the guide face is either eliminated or reduced by elastic deformation of the pre-load pad itself based on an elastic force of the elastic body; wherein a direction of possible displacement of the pre-load pad along the guide face is inclined with respect to a virtual plane containing the central axis of the worm shaft and meshing

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portion between the worm provided on the worm shaft and the worm wheel.

6. Claims 1, 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Eda et al. WO 03/047948

Eda et al. discloses a worm reduction gear comprising a worm wheel 104, a worm shaft 102 and an elastic body 117, wherein the elastic body applies an elastic force to the worm shaft in a direction towards the worm wheel via a pre-load pad 112, and the worm wheel is fixed freely to an assist shaft, and opposite ends of the worm shaft are supported on the inside of a gear housing by a pair of bearings 103a, 103b, and a worm 2a provided in an intermediate portion of the worm shaft meshes with the worm wheel, and displacement of the pre-load pad in relation to a predetermined direction, is restricted by a guide face provided on the gear housing or on a member fixed to the gear housing, and a clearance between the pre-load and the guide face is either eliminated or reduced by elastic deformation of the pre-load pad itself based on an elastic force of the elastic body; wherein a direction of possible displacement of the pre-load pad along the guide face is inclined with respect to a virtual plane containing the central axis of the worm shaft and meshing portion between the worm provided on the worm shaft and the worm wheel.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made. .

8. Claims 5, 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eda et al. WO 03/047948 in view of Shimizu et al. 6,390,230.

Eda et al. discloses the claimed invention except for the particulars of the electric power steering system.

However such details are conventional as shown by Shimizu et al. which discloses a power steering system comprising a steering shaft 12 provided at a rear end portion thereof with a steering wheel 11; a pinion 32 provided on a front end side of the steering shaft, a rack meshed with the pinion or with a member supported on the pinion; an electric motor 82 for rotatably driving the worm shaft; a torque sensor 70 for detecting the direction and magnitude of a torque applied to the steering shaft or pinion; and a controller 81 for controlling a drive status of the electric motor based on a signal input from the torque sensor.

It would have been obvious to mount the device disclosed by Eda et al. on the power steering system disclosed by Shimizu et al. in order to reduce backlash and reduce butting noises without a decline of power transmission performance.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Hurley whose telephone number is 571-272-6646. The examiner can normally be reached on Monday-Friday 9:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on 571-272-6651. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin Hurley/  
Primary Examiner  
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June 25, 2007